

THAT WHICH IS CLAIMED IS:

1. A method for preparing an injectable formulation of interferon-beta (IFN- β) comprising:
 - a) preparing a first solution comprising IFN- β , isolating a pool of purified IFN- β from this solution, and precipitating said IFN- β from this pool using an alcohol to form a precipitate;
 - b) dissolving said precipitate in guanidine hydrochloride (HCl) to form a second solution comprising resolubilized denatured IFN- β and guanidine HCl;
 - c) diluting said second solution into a first buffer to obtain a third solution comprising resolubilized renatured IFN-beta and residual guanidine HCl; and
 - d) removing residual guanidine HCl from said third solution by diafiltration or dialysis of said third solution into a second buffer that is pharmaceutically acceptable, whereby said injectable formulation of IFN- β is prepared.
2. A pharmaceutical composition comprising substantially monomeric IFN- β produced by the method of claim 1.
3. The method of claim 1, wherein said second buffer contains arginine or sodium chloride.
4. The method of claim 1, wherein said first buffer has a pH of about 5.0 to about 8.0, and wherein said residual guanidine HCl is present in said third solution at a concentration of 1.6 M or less.
5. A method for preparing an injectable formulation of interferon-beta (IFN- β), said method comprising denaturation of IFN- β with guanidine hydrochloride (HCl) followed by renaturation of the IFN- β via dilution into a first buffer to obtain a renatured IFN- β solution comprising residual guanidine HCl, and removing said residual guanidine HCl from said renatured IFN- β solution by diafiltration or dialysis of said renatured IFN-

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 β solution into a second buffer that is pharmaceutically acceptable, whereby said injectable formulation of IFN- β is prepared.

5 6. The method of claim 5, wherein said first buffer has a pH of about 3.0 to about 5.0, and wherein said residual guanidine HCl is present in said renatured IFN- β solution at a concentration of 1.6 M or less.

10 7. The method of claim 6, wherein said first buffer has a pH of about 3.0 to about 4.0, and wherein said residual guanidine HCl is present in said renatured IFN- β solution at a concentration of 0.2 M or less.

15 8. The method of claim 7, wherein said first buffer has a pH of about 3.0, and wherein said residual guanidine HCl is present in said renatured IFN- β solution at a concentration of 0.1 M or less.

 9. A pharmaceutical composition comprising substantially monomeric IFN- β produced by the method of claim 5.

20 10. A method for preparing a composition comprising substantially monomeric interferon-beta (IFN- β), said method comprising:
 a) preparing a precipitate of substantially purified IFN- β ;
 b) dissolving said precipitate in guanidine hydrochloride (HCl) to obtain a first solution comprising resolubilized denatured IFN- β ; and
 c) renaturing said IFN- β by dilution of said first solution with a buffer
25 solution.

 11. The method of claim 10, wherein said buffer solution has a pH of about 5.0 to about 8.0.

30 12. A pharmaceutical composition comprising substantially monomeric IFN- β produced by the method of claim 10.

13. A method for preparing an injectable formulation of interferon-beta (IFN- β), said method comprising:

- a) obtaining a sample comprising substantially purified IFN- β ;
- 5 b) mixing said sample with guanidine hydrochloride (HCl) to obtain a first solution comprising solubilized denatured IFN- β ;
- c) diluting said first solution into a first buffer to obtain a second solution comprising solubilized renatured IFN-beta and residual guanidine HCl; and
- d) removing residual guanidine HCl from said second solution by
- 10 diafiltration or dialysis of said second solution into a second buffer that is pharmaceutically acceptable, whereby said injectable formulation of IFN- β is prepared.

14. A pharmaceutical composition comprising substantially monomeric IFN- β produced by the method of claim 13.

15. The method of claim 13, wherein said first buffer has a pH of about 3.0 to about 5.0, and wherein said residual guanidine HCl is present in said second solution at a concentration of 1.6 M or less.

20 16. The method of claim 15, wherein said first buffer has a pH of about 3.0 to about 4.0, and wherein said residual guanidine HCl is present in said second solution at a concentration of 0.2 M or less.

25 17. The method of claim 16, wherein said first buffer has a pH of about 3.0, and wherein said residual guanidine HCl is present in said renatured IFN- β solution at a concentration of 0.1 M or less.

18. A method for preparing a composition comprising substantially monomeric interferon-beta (IFN- β), said method comprising:

- 30 a) preparing a sample comprising substantially purified IFN- β ;

b) mixing said sample with guanidine hydrochloride (HCl) to obtain a first solution comprising solubilized denatured IFN- β ; and

c) renaturing said IFN- β by dilution of said first solution with a buffer solution.

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19. The method of claim 18, wherein said buffer solution has a pH of about 3.0 to about 5.0.

20. A pharmaceutical composition comprising substantially monomeric IFN- β
10 produced by the method of claim 18.